Iowa Farm Science

Volume 17 | Number 5 Article 8

11-1962

For Your Interest

Iowa Farm Science Editorial Board

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farm buildings and equipment

Strip-Till Cultivation Cuts Tillage Power Needs

EXPERIMENT STATION agricultural engineers are testing farm equipment designed to reduce the power required for tillage operations. One machine they have developed is a strip tiller that uses the principle of the rotary tiller.

The strip tiller cultivates a 10-inch strip preceding the corn planter. This tillage method approaches a once-over operation, which reduces the time required for preparing the soil for planting.

C. W. Bockhop, Carroll Goering and Dean Ruwe say that use of the strip-till operation reduces the power required for tillage, trims operating costs and lowers the machinery investment for tillage implements.

livestock

Some Cows Are More Apt To Give Off-Flavor Milk

A COW'S INHERITANCE may have some bearing on the occurrence of "oxidized" flavor in her milk. Experiment Station tests at Iowa State have revealed a difference in the occurrence of oxidized flavor in milk between daughters of different sires and between breeds.

Milk from certain cows is susceptible to this flavor, and it occurs more frequently in certain breeds, explains C. F. Foreman. Preliminary analyses indicate only minor differences between breeds in other milk-flavor characteristics.

Oxidized flavors occured most frequently during the first 45 days of lactation and in advanced lactation. Different seasons and changes in rations fed affected the milk-flavor scores. "Brome unclean" flavors occurred during the pasturing season and, most frequently, in the milk from cows in advanced lactations.

These tests are a part of a broader study of the effect of different feeds on yield composition and quality of milk. Others working on the project include N. L. Jacobson, A. R. Porter, A. E. Freeman, G. W. Reinbold, E. W. Bird and W. S. Rosenberger.

Feed Beef Calves Early Says Animal Scientist

GREATEST over-all efficiency in the beef cattle industry will be achieved when calves are started on feed at a relatively young age, reports L. N. Hazel of the Experiment Station.

Fast-growing strains with just a moderate tendency to fatten are most useful for feeding as calves, he says, but such animals are likely to become too heavy if fattening is delayed.

Hazel bases his conclusions on data from 2 years of tests involving the feeding and carcass evaluation of calves, yearlings and 2-year-old beef cattle.

All of the animals were fed until their carcasses graded approximately Choice. Carcass weights of the three groups were 615, 640 and 679 pounds, respectively.

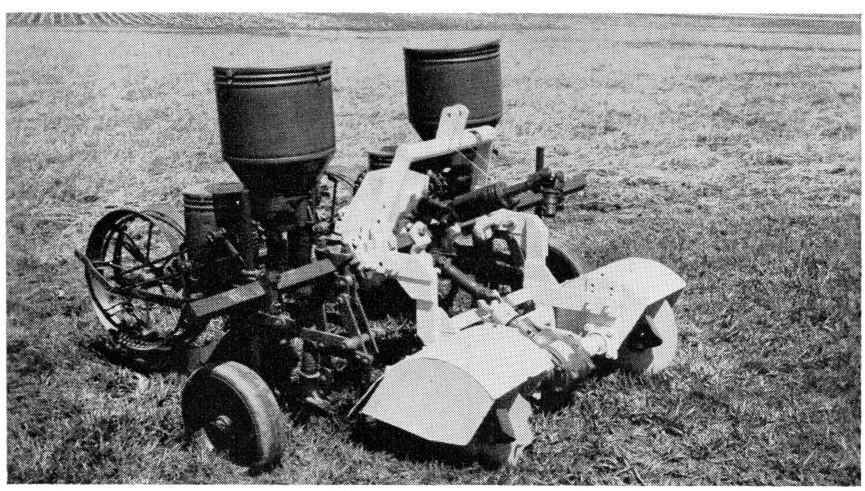
The younger calves required more time in the feedlot, but their feed requirements per pound of gain were about 10 percent lower than for the yearlings or 2-year-olds. Thus, there was relatively little difference in the amount of feed required during the total feeding period.

There was relatively little difference among the three groups in the loin eye area or in the percent of separable lean of the carcasses.

E. A. Kline and Garold Parks are coworkers with Hazel on the broader study of hereditary differences in carcass characteristics of beef cattle.

High-Protein Rations Improve Pig Gains

FEEDING PIGS a high level of protein resulted in improved daily



Strip tiller (white attachment) uses the principle of the rotary tiller to cultivate a 10-inch strip preceding the corn planter.

gain, feed efficiency and carcass quality, in Experiment Station tests. The animals fed the high-protein rations had a higher percentage of lean cuts and less backfat than pigs fed low-protein rations.

The improvement of daily gain, feed efficiency and carcass quality resulting from high-level protein rations appears to more than offset the additional cost of protein, according to T. E. Hazen, D. W. Mangold, V. C. Speer, V. W. Hays and E. W. Seymour.

Those results stem from a study of the interaction between air temperature and level of protein in the pigs' rations. Two temperature levels were maintained in a summer test and a winter test. In the winter study, average air temperatures were maintained at 40° F. and 60° F. In the summer study, constant air temperatures were held at 60° F. and 90° F.

Preliminary tests were conducted during the summer to learn the effect of ventilating air temperature on the performance of lactating sows and their litters. Two groups were used. One group was ventilated with mechanically-cooled air. The other group was ventilated with uncooled air. The mechanically-cooled group showed a slight edge in performance.

dairy and food industry

Test Color Changes of Fresh, Stored Meat

COLOR CHANGES of fresh beef round during storage depend on the storage temperature, according to Experiment Station tests at Iowa State. Light-colored semitendinous muscles invariably discolored at a slower rate than did darker muscles. The researchers obtained precise measurements of color changes, which should provide information about the causes of discoloration.

Understanding and control of fresh meat discoloration could lead to the establishment of large-volume meat cutting and packaging establishments. Such large-volume operations could reduce the cost of marketing fresh meat.

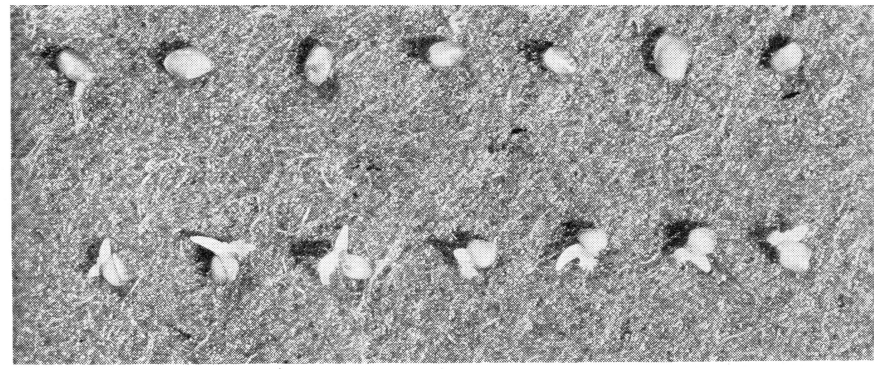
Tests are being continued to find out more about why changes occur in self-service meats stored at low temperatures.

Personnel involved with the tests include Harry E. Snyder, John C. Ayres, Ayfer Keskinel and Clara Papp.

Develop Cheese Called Pizza

IOWA STATE research scientists in dairy and food industry have developed a new cheese—called Pizza—by modifying a standard procedure for making brick cheese. The product is ideal for use in pizza or lasagne, according to George W. Reinbold and Warren S. Clark, Jr. It also has merit as a fresh, mild table cheese or as a dessert cheese.

Pizza cheese can be made in plants that lack the equipment and experienced personnel necessary for the manufacture of Mozzarella cheese.



Untreated seeds of sand dropseed in upper row may not germinate for several months. Treated seeds in lower row germinated in 24 hours.

forages

Renovation, Fertilization Boost Beef Gains From Grass

PASTURE RENOVATION and fertilization increased beef production from pastures on soils considered to be marginal and submarginal for grain production. These soils are typical of areas in southern Iowa.

At the Shelby-Grundy Experimental Farm in Ringgold County, renovated birdsfoot trefoil produced 434 pounds of beef per acre in 1961. Sixty pounds of nitrogen per acre applied to undisturbed sod produced 256 pounds of beef per acre. Unimproved pasture receiving no nitrogen produced 141 pounds of beef per acre.

Average yearly beef production for the 1956-61 period was 321, 198 and 141 pounds of beef produced per acre for the three treatments, respectively, of renovated birdsfoot trefoil, 60 pounds of nitrogen applied to undisturbed sod and unimproved pasture.

In Experiment Station tests at the Albia Research Farm in Monroe County, unimproved bluegrass produced 76 pounds of beef per acre. A legume-depleted meadow fertilized with 120 pounds of nitrogen per acre produced 260 pounds of beef per acre during May 10-Aug. 30. In these tests, Lindley soils on 11- to 20-percent slopes were the principal soils in the pasture areas. The pasture areas are on rough ground and deeply dissected with both crossable and noncrossable drainageways. Each acre, on the average, included from one-fifth to one-fourth acre which was neither renovated earlier nor fertilized with nitrogen in 1961.

These tests were conducted by W. F. Wedin, Walter Woods and H. D. Hughes.

Develop Fast Test for Seed Viability

EXPERIMENT STATION botanists at Iowa State reduced the germination period of dormant seeds of sand dropseed, a pasture forage, from 12 weeks to 24 hours, reports Don F. Grabe. This was accomplished by the combined effects of treating the seeds with gibberellin, a growth stimulant, scarifying the seeds and germinating them in light at 15-35° C.